Operation Manual

Electromagnetic stirrer

uni*STIRRER* 1

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1. PRODUCT DESCRIPTION

Congratulations! You are using slim and compact electromagnetic stirrer designed with modern magnetic coil technology. It provides high IP protection class (IP 65) with no moving parts attached to it. Setting of speed and time with digital display showing real time speed. For better mixing, pulse mode is provided in which stirring bar can rotate clockwise and anti-clockwise for every 30 seconds.

2. INTENDED USE

This electromagnetic stirrer is designed for use in chemical and pharma industry for mixing liquids.

3. FEATURES

1. Flat surface with slim profile.
2. Wear-free drive with no moving parts.
3. Mixing capacity of 800 ml with 25mm magnetic stirring bar.
4. Pulse function of 30 seconds for better mixing.
5. Variable time setting from 1 minute to 99 minutes and infinite mode.
6. Digital display for accurate setting of speed and time.
7. Variable speed setting from 15 to 1500 RPM.
8. Water spill resistant designed as per IP 65 standard.
9. Simple control panel for convenient and easy user interface.
10. Anti - Skid pads.

4. ACCESSORIES

Stirrer Bar (PTFE coated, 25 x 8mm high strength stir bar)

5. TECHNICAL SPECIFICATIONS

Stirring quantity max. per stirring position (H_2O)	800 ml
Stirred quantity (Max) (Tested in H_2O)	500 ml at 1500 RPM with 25mm stirring bar
Speed range	15 - 1500 rpm
Time range	1 to 99 minute a infinite mode
Digital Display	Yes
Recommended bar length	25 mm
Set-up plate material	Stainless Steel
Set-up plate dimensions	Ø 94 mm
Dimensions (L x W x H)	156 x 110 x 13.2 mm
Weight	0.4 - 0.5 Kg
Permissible ambient temperature	5 – 40 °C
Protection class according to DIN EN 60529	IP 65
Input voltage	100 - 230 VAC, 50/60 Hz
Output Voltage	9VDC, 1A
Power Consumption	5W
Auto direction change/Pulse Mode	Yes
Auto direction change time interval	30 seconds

6. MAINTENANCE and SAFETY INSTRUCTIONS

Read the following safety instruction carefully before using the electromagnetic stirrer for your as well as equipment safety.

1. Do not place any steel or magnetic material on the base plate except the recommended magnetic stirring bar with beaker or flask in between. Doing this can affect the magnetism of device.
2. Place device on a flat, stable, clean, non-slippery and fire-proof surface.
3. The base plate must be clean and intact. Use soft mild cloth to clean.
4. Do not try to mix liquid more than 800 ml with 25 mm magnetic stirring bar. It may lead to improper mixing.
5. Wear your personal protective equipment in accordance with the hazardous category of the media to be processed. Otherwise there is a risk from:
   - ☞ Splashing and evaporation of liquids.
   - ☞ Ejection of parts.
   - ☞ Release of toxic or combustible gases.
6. Do not lift or hold the device from the cable.
7. Do not use damaged beaker, flask, stirring bar or any other component for operation. It may affect the efficiency of device.
8. Reduce the speed:
   - ☞ If the medium splashes out of the vessel because to high speed.
   - ☞ If the appliance is not running smoothly.
   - ☞ If the container moves on the base plate.
9. Wear protective gloves while cleaning the device.

6. MAINTENANCE and SAFETY INSTRUCTIONS

10. The base plate may warm after continuous usage. Do not touch the base plate immediately after operation.

11. Process pathogenic materials only in closed vessel under a suitable extractor hood. Do not operate the appliance in explosive atmospheres, with hazardous substance or under water.
12. Only use that liquid for mixing that will not react dangerously to the extra energy produced through processing. This also applies to any extra energy produced in other ways. For example: Through light irradiation, through surrounding temperature etc.

13. Abrasion of the dispersion equipment or the rotating accessories can get into medium you are working on.
14. Chemical reaction of PTFE can occur when in contact with molten or dissolved alkaline earth metals, as well as with fine partied powders of metals of the 2 and 3 group of the periodical system at temperatures above 300-400 ^{o}C. Only elementary fluorine, chlorine trifluoride and alkaline metals do attack PTFE, halogen hydrocarbons have a reversible swelling effect.
15. The temperature of the stirring media in the beaker and beaker itself should not be more than 45^{o} C.
16. The equipment will not restart, both in case of mains interruption and in the case of any fault or mechanical interruption. Care should be taken based on the sample used for mixing.

7. INSTALLATION and OPERATION

The electromagnetic stirrer is provided in the box. Open the box, then remove the packaging and gently place the device on the firm and leveled surface. Take care while unpacking and do not pull the AC power adaptor as it is attached with the device. The user manual should be kept with the device. Please keep all packaging in safe storage for at least two years for warranty purpose.

Below table shows the function of user interface buttons.

Buttons	Buttons Name	Function
	ON/OFF Button	Press button to turn ON and turn OFF the unit.
	Pulse and Time Mode Button	Single press button to activate pulse mode. LED blinks to indicate. Long press button to activate time mode. It will be shown on display.
	Increment Button	Press button to increase speed/time value.
	Decrement Button	Press button to decrease speed/time value.

7. INSTALLATION and OPERATION

1. Connect the AC power adaptor to the mains.
2. Fill the beaker or vessel with the medium or liquids to be processed then place the magnetic stirring bar in the beaker, flask or vessel.
3. Place the vessel or beaker on the center of the base plate.
4. Turn ON the electromagnetic stirrer by pressing ON/OFF button.
5. Set the speed at which the medium or liquids to be processed. Minimum speed is 15 RPM and maximum speed is 1500 RPM.
6. Set the Time if it requires. Minimum time is 1 minute, maximum time is 99 minutes. By default time is always infinite.

SPEED SETTING

- Press increment (+) and decrement (-) button to modify and set speed value.
- Single press increment (+) or decrement (-) button to increase or decrease the speed value by 50 RPM on each press.
- Continuous press increment (+) or decrement (-) button to increase or decrease the speed value at faster pace.
- Speed value is seen in the digital display and get set after 3 blinks.
- At any point of time, user can modify the speed using increment (+) or decrement (-) button.
- On every restart, the stirrer will start with the last run speed.

7. INSTALLATION and OPERATION

TIME SETTING

The default timer is set as infinite more when stirrer starts. In order to set time,

- Long press the “PULSE/TIME” button, to activate time mode. By default the timer will be infinite and will be seen by “ t ∃ℂ ” in display.
- Once activated, single press increment (+) or decrement (-) button to increase or decrease time value by 1 minute on each press.
- Once activated, continuous press increment (+) or decrement (-) button to increase or decrease time value as faster pace.
- After modifying, wait for 3 blinks to set time. Timer is countdown timer and it will take effect once it reaches set RPM.
- Speed can be modifying at any open of time. The speed modified between ongoing times will not affect the time and timer continuous to be countdown. Speed and Time will display alternatively when speed reached to set RPM.
- When timer goes to zero (0), the stirring stops. The display will show “t 00” and “0000” alternatively indicating time for stirring is over.
- After any timely stirring operation, press any button except the power button to start the stirring operation with last run speed and time.

Note: Timer will be set to default (infinite) once restart.

7. INSTALLATION and OPERATION

PULSE MODE

In pulse mode, the stirring direction will be reversed every 30 seconds. In order to select the pulse mode and to reverse the direction of stirring at regular interval, single press the pulse button.

First set the required speed and then single press the pulse button to start stirring process in pulse mode. LED adjacent to pulse button will blink to indicate activation of pulse mode.

Pulse mode can also be time bound. For time bound, set speed and also time, then single press the pulse button to start stirring in pulse mode. Pulse stirring mode end when time goes to zero (0).

7. Press the ON/OFF button again to stop the ongoing operation as well as to switch OFF the electromagnetic stirrer.
8. After every restart (ON/OFF), stirrer will start operating at last run speed and infinite time.

NOTE: *In case of slippage, first turn OFF and turn ON again. If slippage still occurs, then reduce the speed for efficient operation.*

8. WARRANTY STATEMENT

This product is warranted to be free from defects in material and workmanship for a period of three (3) years from date of purchase. Your product will be duly repaired upon prompt notification in compliance with the following conditions:

This warranty is valid only if the product is used for its intended purpose and within the guidelines specified in this instruction manual. This warranty does not cover damage caused by accident, neglect, misuse, improper service, natural forces or other causes not arising from defects in original material or workmanship. This warranty does not cover any incidental or consequential damages, commercial loss or any other damages from the use of this product.
This warranty does not cover damage to paint or finish and defects or damages caused by physical and chemical abuse or normal wear and tear.

The warranty is invalidated by any non-factory modification, which will immediately terminate all liabilities on us for the products or damages caused by its use. The buyer and its customer shall be responsible for the product or use of products as well as any supervision required for safety. If requested the products must be returned to the distributor in well packed and insured manner and all shipping charges must be paid.

Some states do not allow limitation on the length of implied warranties or the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights. This warranty is given expressly in lieu of all other warranties, expressed or implied.

8. WARRANTY STATEMENT

The purchaser agrees that there is no warranty of merchantability or of fitness for any intended purpose and that there are no other remedies or warranties, expressed or implied, which extend beyond the description on the face of the agreement. This warranty is only applicable to the original purchaser.

All items returned for service should be set postage prepaid in the original packaging or other suitable carton, added to avoid damage.

If the instrument is faulty or help is needed, please contact your local distributor.

For your reference, make a note of the serial number, date of purchase and supplier here.	
Serial No.:	Purchase Date:
Supplier:	

9. PRODUCT DISPOSAL

In case the product is to be disposed of, the relevant legal regulations are to be observed.

Information on the disposal of electrical and electronics devices in the European Community.

The disposal of electrical devices is regulated within the European Community by national regulations based on EU Directive 2012/19/EU on waste electrical and electronics equipment (WEEE). According to these regulations, any devices supplied after 13.06.05 in the business to business sphere, to which this product is assigned, may no longer be disposed off in municipal or domestic waste. They are marked with the following symbol to indicate this.

As disposal regulations within the EU may vary from country to country please contact your supplier if necessary.

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